

Pneumatic Drill

Type 2 1362 0010

ATEX Tool



Illustration can differ from the original

Operation and Maintenance Manual

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Signal Word and Symbol Definition

The signal words and symbols used in the technical documentation (safety instructions, operating booklet, etc.) have the following meaning:



WARNING – Read the operation and maintenance manual

It is imperative to familiarize with this operation and maintenance manual and its safety instructions before starting your SPITZNAS machine. Stick to the operating processes and avoid accidents due to improper use of the machine.



This symbol has the following meaning:

DANGER – Indicates an **immediate danger**, which causes serious injuries to any person or even death, if not avoided.

WARNING – Indicates a **threatening danger**, which can cause serious injuries to any person or even death, if not avoided.

CAUTION – Indicates a **danger or unsafe procedure** which can cause injuries to any person or material damages, if not avoided.

NOTICE – Indicates a **potentially dangerous situation** which can cause damage to the product or its surroundings, if not avoided.



WARNING – explosive atmosphere

Air and flammable substances can mix and result in an explosive atmosphere. In areas exposed to explosion hazards, supplementary instructions and directives apply. Observe the safety instructions of the employer as well.



WARNING – explosive material

Caution should be exercised when working with explosive material or in its surrounding area.



PROHIBITION – No naked flame, fire, or ignition source and no smoking

Prevent from fire and explosion hazards, which can be caused by naked flame, open ignition source or by smoking.



Eating and drinking forbidden – The prohibition sign forbids the consumption of food.



REQUIREMENT – Observe the instruction

Ensure that the operation process is adhered to and avoid accidents and expensive break down times due to improper use of machines, devices and tools.

By using the mandatory sign you refer to the adherence of operation instructions.



NOTICE – Gives recommendations and important hints for handling the product


IMPORTANT – Indicates application advice and other particularly useful information.

This symbol has the following meaning:

REMARK:

In each case the used symbol does not replace the safety text. The text must always be read fully. In some cases other symbols will be used with the signal words.

Technical Specification

Operating pressure	6 bar
Power	1 kW
Free speed step 1, 2, 3, 4	450, 650, 850, 1000 1/min
Rotation direction	reversible
Drill chuck	up to \varnothing 13 mm
Drilling in steel	max. 30 mm
Thread cutting	max. M12
Air consumption	1.15 m ³ /min
Air connection	R ¼" female
Weight	3.7 kg
Length with drill chuck	approx. 230 mm
Sound pressure level L _{pA} ⁽¹⁾	84 dB (A)
Sound power level L _{WA}	95 dB (A)
Vibration ⁽²⁾	< 2.5 m/s ²
ATEX Classification	 II 2G Ex h IIB T5 Gb
⁽¹⁾ Remark: Measurement acc. to DIN EN ISO 15744	Measurement uncertainty K: 3 dB (A)
⁽²⁾ Remark: Measurement acc. to DIN EN ISO 28927-5	Measurement uncertainty K: 1.5 m/s ²

The performance specifications are guide values only, they depend basically on the application, the working pressure and the accessories used.

Intended Use

SPITZNAS machines are designed for industrial use only.

Only trained, skilled personnel are allowed to operate the machine. The drill serves for drilling:

- Wood, plastic, non-ferrous metal, cast iron, steel and stainless steel

It can be applied for:

- Chemical industry / refineries, nuclear industry, body construction and ship building industry, construction.

Improper Use

Any use deviating from the intended use as described is considered to be improper use.

- Working without personal protection equipment.
- Using the machine in an inadmissible area.
- Drilling self-flammable material.

Product Description



Fig. 1

- 1 Reverse slide
- 2 Valve trigger
- 3 Air connection
- 4 Exhaust
- 5 Speed regulator

- 6 Motor housing with pistol grip
- 7 Drill chuck key
- 8 Drill chuck
- 9 Gear housing
- 10 Second Handle

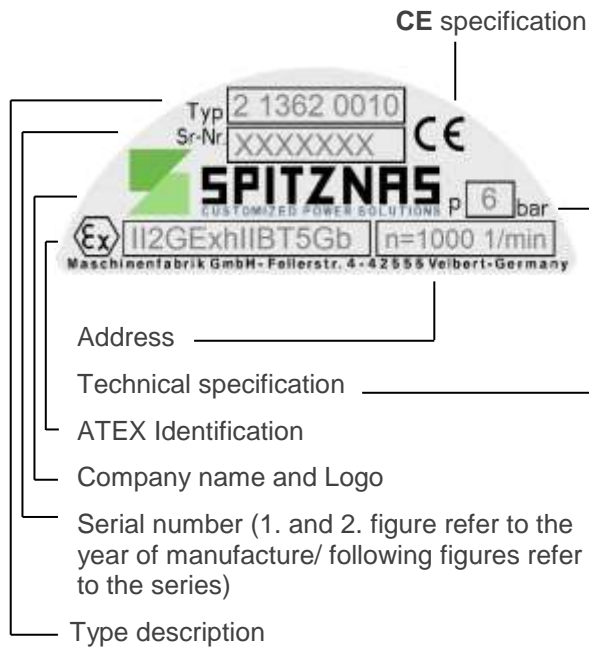
Scope of Delivery

Check, if the scope of delivery is complete:

- 1 Pneumatic Drill, 1 Operation and Maintenance Manual, 1 Carrying case and accessories, if applicable

Identification

Type sign



Explanation of ATEX Identification

Specification

acc. to 2014/34/EU



Machine group II

Explosive atmospheres
e. g. Industry

Category 2

Very high level of safety 1
High level of safety 2
Normal level of safety 3

Ex-Atmosphere G

Gas, vapor and mist

Marking according to standard - Ex-Symbol

Ignition protection category h

Code letter h for all
non-electrical equipment

Explosion group IIB

e.g. Methane, Propane IIA
e.g. Ethylene, Town gas IIB
e.g. Hydrogene, Acetylene IIC

Temperature class T

Surface limit temperature
450°C T1
300°C T2
200°C T3
135°C T4
100°C T5
85°C T6

Equipment Protection Level

Group II EPL Gb

Category 2 (usable in category 3 as well) explosion group IIB usable in explosion group IIA as well.

Installation

Requirements to the air supply

The pneumatic drill works optimally at an operating pressure of 6 bar, measured at the air inlet. The distance from the air supply to the machine has to be adjusted to the application conditions on site.

We recommend installing an oiler or a maintenance unit upstream the machine for compressed air preparation. Use acid and resin-free lubricating oil, like SAE 5W - SAE 10W. Attention! Do not use viscous oil.

Use an antifreeze lubricant during winter time or when the compressed air is very moist, e.g.:

- "Kilfrost"
- or "Kompranol N74".

The supplied compressed air has to be free of:

- Foreign particles,
- humidity.

Pay attention that all hoses:

- Have a cross section being large enough,
- do not have any restrictions or kinks,
- are designed for a minimum operating pressure of 6 bar,
- are replaced regularly at preventative maintenance,
- have an oil resistant inner surface and an abrasion-resistant outer surface,
- are proved and specified to be non-conductive when being used next to electric conductors.

Always use hoses, lubricating oil and antifreeze lubricants, which meet the local safety requirements for use in areas exposed to explosion hazards.

Connecting the air supply to the pneumatic drill

Remove the locking cap from the air connection 3. Connect the pneumatic hose (not contained in the scope of delivery).



Fig. 2

Startup

Assembly of the handle

Fix the second handle item 10 at the side (see fig. 3 and 4).



Fig. 3



Fig. 4

Connection of the air supply

Sample application: Quick-coupling for the air connection
Screw-in nipple (not contained in the scope of delivery) (see fig. 5 and 6).



Fig. 5



Fig. 6

Blow out the pneumatic hose before connecting the machine.

Never connect a pneumatic hose being under pressure (see safety instructions for prevention of hazards caused by compressed air).

When connecting the machine, pay attention that the valve trigger 2 (see fig.7) is not actuated. First connect the machine and then connect the compressed air supply.

Make a test run.



Fig. 7

Mounting the drill bit

When mounting the drill bit, ensure that the pneumatic hose is not connected, respectively that the pneumatic supply is deactivated. Depressurize the pneumatic drill and disconnect the pneumatic hose (see fig. 8).



Fig. 8

Open the drill chuck item 8 by turning until the drill bit can be mounted. (see fig. 9 and 10).

Turn to open



Fig. 9



Fig. 10

Mount the drill bit (see fig.11).



Fig. 11

Turn the drill chuck item 8 against the opening direction (see fig.12).



Fig. 12

Put the drill chuck key item 7 (see fig. 13) in the corresponding drillings of the drill chuck item 8 and tighten the drill bit evenly.

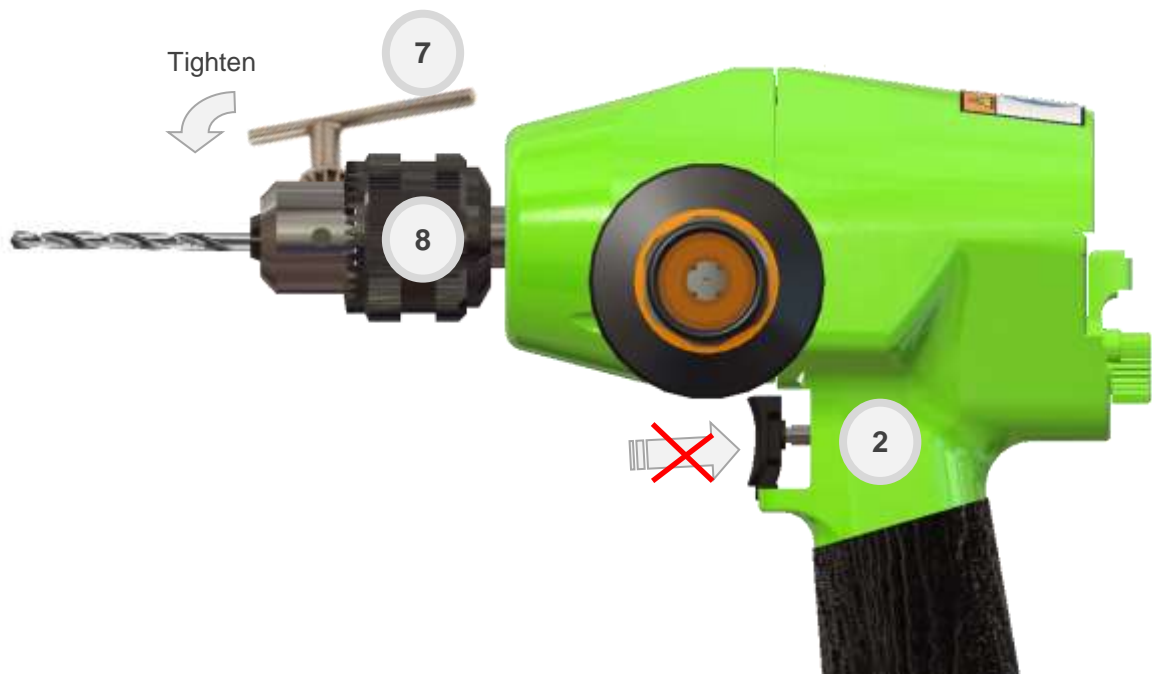


Fig. 13

When connecting the machine, ensure that the valve trigger item 2 (see fig. 13) is not actuated. Never connect a pressurized pneumatic hose (see safety instructions for prevention of hazards caused by pneumatic). First connect the machine and then the pneumatic supply.

Adjusting the rotation direction

Clockwise rotation



Fig. 14



F „Forward“ for clockwise rotation

Anti-clockwise rotation

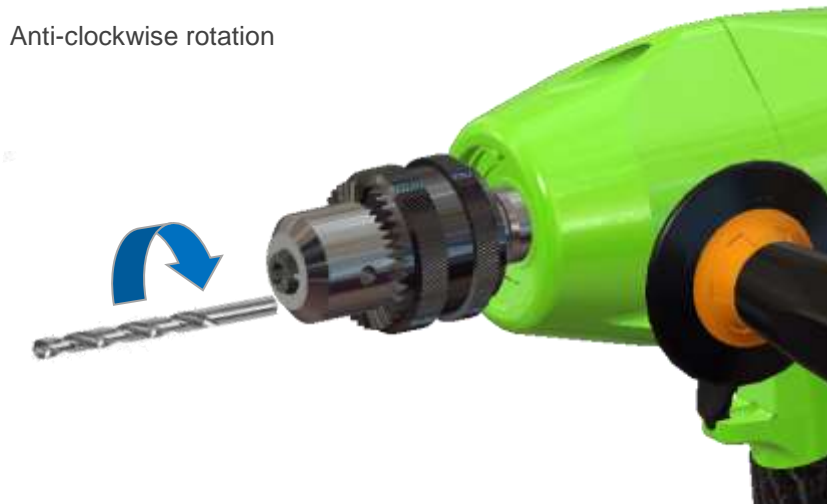


Fig. 15



R „Reverse“ for anti-clockwise rotation.

Prior to starting work

Check:

- That the drill bit is properly tightened in the drill chuck,
- That the pneumatic hose is properly connected,
- That the rotation direction is adjusted with the reverse slide item 1 and the speed stage is correctly adjusted with the speed regulator item 5 (see fig. 14 and 15).

Start the machine by actuating the valve trigger item 2 and start operating. The drill bit has to be cooled with water in order to avoid sparks.

After finishing the work

- Release valve trigger.
- Shut the pneumatic supply, disconnect the pneumatic hose.
- Dismount the drill bit, if necessary.

Operation

Replacing the drill bit

Shut the pneumatic supply and secure against unintentional starting. Depressurize the pneumatic drill and disconnect the pneumatic hose. Wear protective gloves when replacing the drill bit, as the drill bit and the drill chuck can strongly heat up during longer operation. Put the drill chuck key item 7 (see fig. 16) in the corresponding drillings of the drill chuck item 8 and undo the drill bit.



Fig. 16

Open the drill chuck item 8 by turning and take the drill bit out of the drill chuck (see fig. 17 and 18).

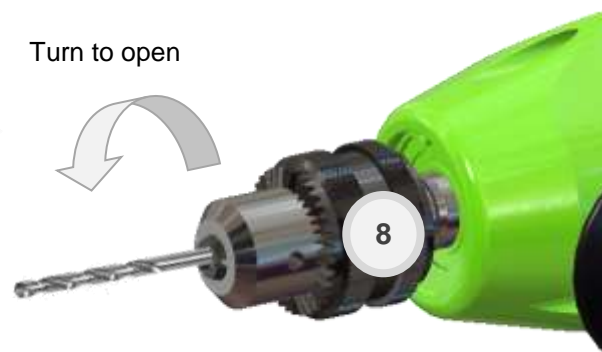


Fig. 17



Fig. 18

Mount the drill bit (see fig. 19).



Fig. 19

Turn the drill chuck item 8 against the opening direction (see fig. 20).



Fig. 20

Put the drill chuck key item 7 (see fig. 21) in the corresponding drillings of the drill chuck key item 8 and tighten the drill bit evenly.

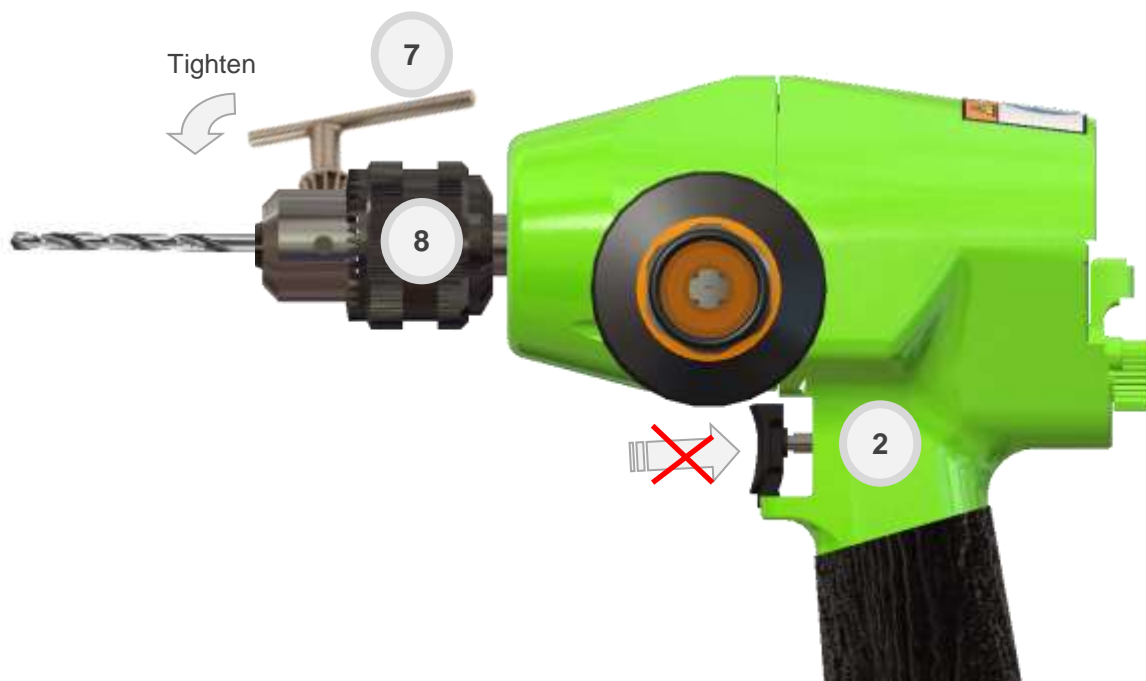


Fig. 21

Actuate the pneumatic supply.

Adjust the rotation direction (see „Adjusting the rotation direction“ on page 13) and start drilling.

Second handle

The second handle item 10 can be mounted at two positions.

Undo the second handle item 10 (see fig. 22 and 23) .



Fig. 22



Fig. 23

Mount the second handle item 9 at the opposite side (see fig. 24 and 25).



Fig. 24



Fig. 25

Accessories

Mount the quick-release chuck

SPITZNAS part no.: 9 2902 0040

Shut the pneumatic supply and disconnect the pneumatic hose from the pneumatic drill. Wear protective gloves when replacing the drill chuck to avoid injuries.

Open the drill chuck item 8 by turning. (see fig. 26).



Fig. 26

Put the hexagon screw driver SW 5 through the drill chuck item 8 on the socket head screw (see fig. 27 and 28).

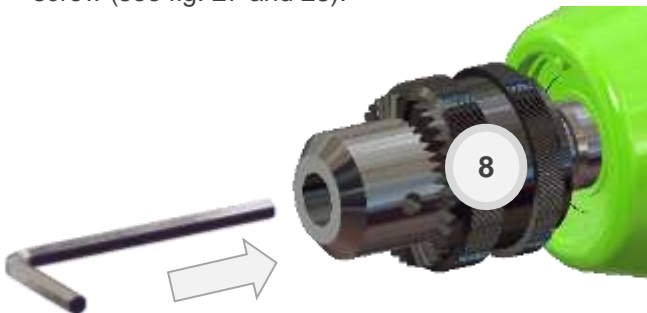


Fig. 27



Fig. 28

Turn the hexagon screw driver SW 5 until the drill chuck item 8 becomes loose and pull it from the shaft (see fig. 29 and 30) .

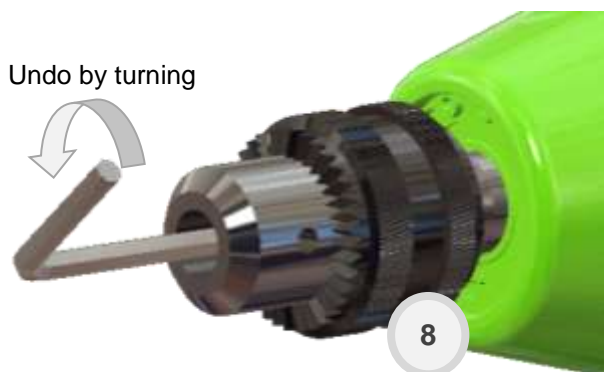


Fig. 29



Fig. 30

Tighten the socket head screw and put the quick-release chuck onto the shaft (see fig. 31 and 32).



Fig. 31



Fig. 32

Disassembling the quick-release chuck
SPITZNAS part no. 9 2902 0040

Put a wedge with the pneumatic drill on a support. Put a second wedge on the top and drive the quick-release chuck off the shaft by slightly hammering. (see fig 33 to 36).



Fig. 33



Fig. 34



Fig. 35



Fig. 36

Mounting the exhaust connection
SPITZNAS part no.: 6 1034 9100



Fig. 37

A Exhaust connection with hose nozzle

B Hose nozzle for air supply

Remove connecting nipple and exhaust plate (see fig. 38 and 39).



Fig. 38



Fig. 39

Mount exhaust connection and fix it with the threaded nozzle (see fig. 40 and 41).



Fig. 40



Fig. 41

Basic Safety Instructions



Read operation instructions/safety instructions!

Before working on or with the tool, read the safety instructions and follow the instructions during operation.

Do not modify the machine or the machine tools and accessories after receipt. Any constructive changes or modifications need the manufacturer's acceptance and have to be in compliance with the safety instructions. Use the machine only for its determination. Consider the technical data of the equipment and the ambient temperatures. Pay attention to labels, restrictions of use and special instruction notes on the machine tools and the machine itself. Check regularly that the type plate and symbols on the machine are legible. If necessary, contact the manufacturer to replace them. Only operators with technical knowledge, trained by authorized responsible technical personnel, may install, adjust, operate, transport and store the machine.

Employer's Obligations

Generally, the employer is responsible for the faultless condition/operation of the machine and the adherence to the safety regulations. The machine is designed and manufactured in accordance with state-of-the-art technology and the recognized safety rules and regulations. However, using it, there is still a risk of accidents to the operator or third parties or damage to the machine or other objects. All current regulations and specifications, which apply to the site of operation in regards to accident prevention, installation of electrical and mechanical systems as well as radio interference must be considered.



IMPORTANT - The employer must make sure that...

- risk assessment is carried out for the specific risks, which can occur due to any operation of the machine,
- the function of the safety equipment is regularly checked,
- the safety symbols and safety notes on the machine/ device and the operating instruction booklet are considered,
- the safety instructions and the operating instruction booklet are available completely and in legible condition on site with the machine.

The employer is obliged to allow personnel to work on the machine only, who:

- Are familiar with the basic work environment safety rules and accident preventing regulations. Also, those persons must have been instructed in the correct use of the machine,
- have read and understood the safety and warning notes in the operating instruction booklet as well as all the other documentation pertaining to the machine,
- have been tested at regular intervals in regards to their safety-conscious operation.

Safety-conscious working

Additionally to the safety instructions in this manual and the intended use, the following safety regulations have to be considered:

- Accident prevention instructions, safety and operation regulations,
- explosion protection directives,
- safety regulations for the operation with hazardous material,
- effective norms and laws.

Operator's Obligations

All persons who are assigned to work with the machine are obligated to:

- Pay always attention to the basic safety and accident preventing regulations,
- read always and follow the safety and warning notes in the operating instruction booklet.

Explanation of Symbols for Protective Equipment and for Accident Prevention



Use protective clothes – Protective clothes are necessary for diverse applications, e.g. protection against chemicals, heat and cold. Provide appropriate protective clothes to your staff and identify this requirement by convincing signage.



Use head protection – Keep staff and visitors from head injury. Provide enough safety helmets and identify the obligation for using safety helmets by appropriate mandatory signs.



Use eye protection – whether goggles, laser safety goggles or etc. – identify areas where eye protection has to be used, by appropriate mandatory signs.



Use ear protection – Capsule hearing protectors or hearing protectors have to be used for ear protection, depending on the sound intensity at the work place. Provide appropriate ear protection and identify the obligation for using ear protection by appropriate mandatory signs.



Use foot protection – Foot injuries by vehicles, objects, hot material or hazardous substances can be avoided by appropriate protective shoes. Equip your staff with appropriate protective shoes and identify those requirements properly.



Use hand protection – Identify convincingly the safety requirement „Use hand protection“ by a gloves sign, respectively a gloves symbol.



Use respiratory protection – Ensure that the specified protection equipment is available and that it is used. Identify by mandatory signs, where and when respiratory masks are required.

Danger Zones

Operational condition ----- Life phase	Normal function	Malfunction	Improper use	Expected use
Transport	Transport of the machine in an inoperable condition	Drop of the machine	Transport of the machine in an operable condition	unknown
Startup	Equipment of the machine with designated drill bits	unknown	Equipment of the machine with grinding pins or other tools	unknown
Operation	Machine works only with actuated valve	Machine runs without intended actuation	Valve is blocked in actuated condition	unknown
	Machine moves the drill bit	Machine blocks	unknown	unknown
Maintenance	Operation at a service unit Regular cleaning	Breakdown of the machine	unknown	unknown

Safety Instructions for Prevention of Workplace Hazards



WARNING – The following applies unless otherwise stated in the machine's operating instructions booklet:

The machine is not insulated to protect against an electrical power surge.



CAUTION – risk of injury!

Hands may be crushed, seized or otherwise injured. Keep your hands away from areas which are marked with this symbol.



CAUTION – risk of injury!

Remove all sources of danger which could lead to slipping, tripping or falling (e.g. slippery surface, hoses, cables). Keep the work area clean and tidy.



PROHIBITION – Eating, drinking and smoking are forbidden during operation.



WARNING – Explosion hazard!

Operate the machine only according to the intended use. The machine is designed for the use in areas exposed to explosion hazards as well. The generation of heat and –eventually- sparks at the drilling point is characteristic for drilling certain material. Therefore the drilling point has to be cooled continuously.

Consider the following:

- Valid local explosion protection directives.
- Technical specification of the machine.
- Markings on the machine.
- Avoid the generation of sparks.
- When operating the machine, do not push or beat against other material and hold the machine firmly and safely by hand.
- Do not slide the machine over the ground.
- If heat generation exceeds the specified surface temperature, the machine has to be stopped instantly. It may be re-started only after having eliminated the cause for the fault.
- The work area and the other close working areas should always be protected from sparks.
- Flammable and explosible material has to be removed from the work area before starting work. Among others, this relates to dust deposits, cardboard, packing material, textile, wood and wooden splints, but also flammable fluids.
- All dust deposits in and on the machine have to be removed regularly.
- Consider that there must be no flammable dusts at the place where the machine is operated.



Ensure adequate lighting.

Be extra careful in unfamiliar surroundings. There is a risk of hidden hazards such as electric lines or other supply lines. Make sure when operating the machine that no electrical cables, gas pipes or similar could be damaged. Use suitable and personal protective equipment.

Safety Instructions for Prevention of Hazards caused by Compressed Air



WARNING – Compressed air can cause severe injury. Before working on the tools (e.g. installation, changing accessories or machine tools, prior to a long standstill, maintenance, etc.) depressurize pneumatic equipment.

CAUTION – Risk of injury by whipping pneumatic hose.
Check pneumatic hoses, connection components and fittings regularly for any damages and proper fixture.

When connecting / disconnecting the machine to / from the pneumatic supply, please pay attention not to actuate the valve while doing so. Never remove a pressurized pneumatic hose. Always switch the power supply off first and then depressurize the machine.

The maximum operating pressure (flow pressure) according to the technical specification must not be exceeded. A pressure regulator should be installed, which regulates the pressure before it reaches the machine. Never direct a pneumatic hose at yourself or anyone else. Never clean your clothes with compressed air. Direct cold air away from your hands. Do not pull or carry the machine by the pneumatic hose. When using claw couplings make sure that they are fitted with a suitable lock mechanism (e. g. lock pin) and a safety chain.

Safety Instructions for Prevention of Operating Hazards

Before starting work make sure that the hands are protected against: impacts, crushing, hits, cuts, abrasions and heat. The operating and maintenance personnel must be physically able to handle the bulk, the weight, the power and/or the torque of the machine. Do not use the machine if you have taken any medication or drugs, after drinking alcohol or with any other constraints on your vision, reaction time or judgment. Work in the best possible position so that you can react with both hands to any normal or unexpected movements of the machine. Maintain a balanced body position and secure footing in order to avoid improper strain and to be able to support the reaction torque of the machine. If you cannot safely support the reaction torque of the machine, use a torque reaction bar (e.g. linear stand, telescopic arm, holding fixture/ holder-on, support grip).

Additionally consider the following:

- Operate the machine only after having carefully read the operation manual.
- Use drill bits appropriate for the application with this machine.
- The work place has to be secured according to the instructions, in order to avoid injury to persons nearby due to projectiles coming-off.
- The machine is for hand-held operation only.
- Consider the producer's specification when selecting the drill bit.
- Check the secure fixing of drill chuck and drill bit before starting work.
- Remove the drill chuck key 7 (if available) before starting the machine (see fig. 3).
- If the machine blocks, higher reaction torques can occur. Blocking can be caused by: overload, tilting of the drill bit in the work piece or when penetrating the material to be drilled. Do not let the drill bit rumble on the work piece, as this will most likely increase the vibration. When drilling through-holes, reduce the contact pressure shortly before the drill bit penetrates the material (for thin walled work pieces there is the risk that the drill hitches the work piece and lifts it.)
- It is possible that the drill bit keeps on running after the machine has been switched off. Wait until it stops and deposit the hand-held machine in a secure position.
- Never stop the drill chuck or the drill bit by hand.

Safety Instructions for Prevention of Entanglement Hazards



CAUTION – Loose clothing, personal jewellery (e.g. necklace), scarves/ ties, long hair or gloves can get caught up in the machine tool or accessories and thus cause severe injuries (lack of breath by throttling, abrasions, skin injuries and/ or cuts and lacerations).



Wear suitable, close fitting work clothing!

Wear a hair net, if you have long hair. When handling the machine, jewellery, necklaces, etc. have to be removed or are forbidden, respectively.

Safety Instructions for Prevention of Noise Hazards



Always wear hearing protection – This refers to the operator, as well as to any other person within the vicinity of the machine. Observe the instructions of the employer and of the professional association.

During operation high noise levels can cause permanent hearing problems such as tinnitus (ringing, buzzing, whistling or humming in the ears), hardness of hearing or even deafness.

- Before starting work, ensure that the provided, respectively the factory-made, sound absorbers are mounted and in proper condition.
- If possible, use sound absorbing material, in order to avoid ringing noise at the work pieces.

Safety Instructions for Prevention of Vibration Hazards

Vibrations can cause damage of nerves and blood vasculares in hands and arms.

- Wear warm clothing and keep your hands warm and dry when working in cold conditions. Exercise hands and fingers regularly.
- Use stands and/or weight balancers, if possible.
- When using a support (e.g. stand) make sure the machine is securely fixed. If no support is used, hold the machine with light but safe grip in order to support the tool's reaction torque. The tighter the grip the greater the risk of vibrations.
- Mount the machine as described in the operating instruction booklet in order to avoid unusually high vibrations.
- Stop work immediately, if you feel any numbness, tingling, pain or whitening of fingers or hands. Inform the employer and consult a doctor.

Safety Instructions for Prevention of Dust and Fume Hazards



Wear respiratory protection - Use respiratory protection as instructed by your employer and as required by occupational health and safety regulations. Potentially generated or disturbed dust and fumes in the working environment or from using the machine can cause illness (e.g. cancer, birth defects, asthma and/ or dermatitis).

- Carry out risk assessment regarding dust and fume hazards and implement appropriate measures.
- Keep the working place clean.
- Keep in mind that working in certain materials may create dust and fumes causing a potentially explosive atmosphere.

Remark: Some material may have toxic coatings.

Please pay particular attention to avoid skin contact and breathing in, when working with those materials. Always use a protective mask. Ask your material supplier about special safety instructions and stick to them.

Safety Instructions for Prevention of Projectile Hazards



Wear impact-resistant safety goggles – This refers to the operator, as well as to the persons within the vicinity of the machine. Assess and determine the grade of protection required depending on the individual case. The risks to others should also be assessed at this time.



On overhead work, wear a safety helmet. If a work piece, accessories, inserted tools, or the tool itself breaks, there is danger from high velocity projectiles.

- Check all parts for damages before using the machine.
- Replace damaged parts immediately.
- When working on brittle material make sure that you are protected against harmful splinters.

Safety Instructions for Prevention of Accessory Hazards

Use only machine tools, accessories and consumables, which are recommended by the manufacturer. Make sure choosing the correct size and the correct type. Use only accessories, which are in proper condition.



CAUTION – Injury due to carelessness!

If the machine is fixed to suspension equipment make sure that it is secure. Never hang the machine onto the supply line.

- Separate the machine from any external energy source before changing the machine tool or any accessory.
- Avoid direct contact with the machine tool during and after use as it can be hot or sharp.
- Wear protective gloves when changing a tool or an accessory!



Notice: Defective/ inappropriate gloves can lead to injury. Wear only proper hand protection, adapted to the work place requirements.



WARNING – Explosion hazard!

When operating the machine in areas exposed to explosion hazards, use only accessories, respectively devices, which are ATEX approved and specified.

Safety Instructions for Prevention of Transport Hazards



ATTENTION – Improper Transport, injury due to parts falling down!

Damage of the machine!

- Separate the machine from any external energy source before transportation. Check that the machine is undamaged and in proper condition.
- Never carry the machine at the supply line.



Wear worker's protective shoes!

Service and Maintenance

Basic Safety Instructions:



WARNING – Maintenance and repair work on pneumatic equipment.

Compressed air can cause severe injury. Observe legal regulations. Take precautions for persons and environment. Additionally, observe the following:

- Secure machine against unintentional starting and let the machine cool down to the ambient temperature.
- Protection against tipping, tumbling or falling down when assembling/ disassembling the machine/parts.

CAUTION – Skin exposure to hazardous dusts may cause severe dermatitis. Dust present at the work place could be disturbed during the maintenance procedure and inhaled. Clean machine and work place before maintenance work.



WARNING – Danger of explosion! Generation of sparks during maintenance work!

Observe local safety regulations. Avoid use of force when disassembling and assembling the machine. Always do maintenance work outside areas which are not exposed to explosion hazards.



PROHIBITION - Eating, drinking and smoking are forbidden during maintenance and repair work.



NOTICE – Use only original SPITZNAS spare parts, in order to avoid damages.

Otherwise you risk a decrease in machine performance and an increase in maintenance work. Check the adherence to the technical specifications according to the operation manual after each maintenance work.

IMPORTANT – There is no warranty for damages and liability is disclaimed, if non-original spare parts are used.

Maintenance Instruction

Generally, pneumatic machines need little maintenance. If the following rules are observed, the machine will have the expected long life-time and high reliability. Service life and performance of the machines are decisively determined by:

- The air purity,
- the lubrication conditions and maintenance,
- the **regular control of the compressed air filter**, as well as the **regular checking of the machine with regards to external damages**.

Disassembly and re-assembly of the machine have to be executed by qualified staff only. Incorrect assembly can lead to danger of accident for the operator and to defects on the machine. Additionally to the measures described before, it is a must to check the grease in the gear and to fill it up or replace it, if necessary. The correct quantity of grease (10 g) is very important with regard to good lubrication and low warming. Grease: SPITZNAS order number 9 9902 0130 (400 g); 9 9902 0250 (100 g)

Furthermore we recommend a general overhaul of your pneumatic drill once a year at the manufacturer, as well as the regular maintenance.

After completing maintenance and repair work and before restarting production make sure that...

- all materials, tools and other equipment which are required for maintenance or repairs have been removed from the work area of the machine,
- any fluid leaks have been removed,
- all safety devices on the machine have proper function,
- fixtures of screw connections are tight,
- removed covers, screens or filters were reinstalled.

The employer ensures that all maintenance, inspection and assembly work is done by authorized and qualified experts.

Disassembly- Re-assembly

Maintenance and repair

Disassembly and re-assembly should be done according to the exploded views, respectively the sectional drawings (see repair instruction). All work regarding disassembly and re-assembly, have to be executed by SPITZNAS or skilled staff only.



DANGER – Working with the machine without appropriate preparation and disregarding of instructions. Shut down the machine properly and let it cool down to the ambient temperature.



NOTICE – Special instructions apply for the repair of explosion-proof machines. Retrofits or modifications of the machine need the manufacturer's acceptance. The explosion-proof machine is designed in the type of protection „c“ constructive safety. All work executed on the machine, influencing the explosion protection, e. g. repairs with mechanical machining, require an approval of an authorized expert or have to be done by the manufacturer. The internal structure must remain unmodified.

Storage

Unused machines and machine tools should be kept in a dry, closed room.

Keep them free from damaging influences such as damp, frost or large temperature fluctuations as well as mechanical damage. Always store the machine in a way that important machine instructions, e. g. on stickers and signs, remain legible.

Disposal

Dispose of machine and worn out/defective machine tools according the local/national regulations. Fully disassemble the machine for the necessary disposal. Separate materials according to local environmental specifications. Dispose of environmentally hazardous greasing, cooling or cleaning agents in order to avoid environmental contamination.

Environmental Regulations

When working on or with the equipment, it is imperative to observe all legal requirements in regards to waste-disposal and proper recycling.

In particular during installation, repair and maintenance work, water damaging agents, such as



- lubricating grease and oil,
- coolant,
- solvent containing cleaning agents

must not leak into the ground or reach the sewage system.

These materials must be stored, transported, contained and disposed of in suitable containers!

Troubleshooting

The following table shows possible problems and their causes:

Problem	Cause	Remedy
Machine does not start	Not connected to compressed air Rotor rusty due to humidity Vaness jam (worn out) Gear blocks	Connect and open the supply line Disassemble motor and clean it Check functioning of maintenance unit Disassemble motor and clean it, replace worn out parts Disassemble gear, clean it, replace worn out parts
Valve trigger jams	Impurities in the valve	Clean valve seat
Machine is rotating too slowly	Too little operating pressure Hose diameter too small Too little volume flow Rotor is rubbing against the end plate / cylinder bushing Gear parts are worn down	Increase operating pressure Choose larger hose diameter Increase volume flow Disassemble motor and clean it, replace worn parts Disassemble gear, clean it, replace worn out/damaged parts
Motor seizes up / jams	Vaness are worn or broken; broken parts are jammed between the rotor and the cylinder bushing No lubrication – ball bearings were running dry; rotor was rubbing against the end plates Coarse dirt particles in the motor compartment between the rotor and the cylinder bushing	Disassemble motor and clean it, replace worn out parts Disassemble motor and clean it, replace worn out parts Disassemble motor and clean it, replace worn out parts
Gear makes loud noises	Needle cages are defective Gear teeth are chattering Ball bearings are defective	Disassemble gear, clean it, replace worn out parts
Drill bit cannot be clamped in the drill chuck	Drill chuck defective Diameter of drill bit too small	Replace drill chuck Use drill bit with larger diameter

If necessary, we ask you to send the machine to the supplier.

Warranty and Liability

Unless otherwise specified, our „General Sales Terms” apply. Warranty and liability claims in regards to persons or equipment damages are invalid, if one or more of the following causes apply:

- Improper use of the machine,
- improper assembly, startup, operation or maintenance of the machine,
- operation of the machine with defective safety devices or improperly fixed or non-functioning safety and protection devices,
- not considering of the instructions in the operating instruction booklet concerning transport, storage, assembly, startup, operation, maintenance and setting up of the machine,
- independent structural alterations or settings on the machine beyond the intended purpose,
- inadequate supervision of wear parts,
- improperly carried out repairs, inspections or maintenance,
- catastrophic cases due to foreign objects, acts of god or other reasons which are beyond our control.

Declaration of conformity

as defined in the Machine Directive 2006/42/EC and in the
EU-ATEX-Directive 2014/34/EU for usable machines

We, the company
SPITZNAS Maschinenfabrik GmbH, Fellerstraße 4, 42555 Velbert–Langenberg,
declare that the following product

Description: Pneumatic Drill
Model: **2 1362 0010**

in the version supplied by us, complies with the Machine Directive 2006/42/EC
and the EU-Directive 2014/34/EU (ATEX – group II, category 2, G Ex h IIB T5 Gb).
Applied harmonized norms are:

DIN EN ISO 12100
DIN EN ISO 11148-3
DIN EN 60079-0
DIN EN ISO 80079-36
DIN EN ISO 80079-37

According to section 13 (1) b) ii) of the Directive 2014/34/EU the technical documentation is
deposited under reference No. 557/Ex-Ab 2236/14 at the following office:

TÜV Rheinland Industrie Service GmbH
Am Grauen Stein, 51105 Köln
(Registration No. 0035 for the scope of
the Directive 2014/34/EC)

Name of the authorized person for documentation: Mr. Simon Witt
Address of the authorized person for documentation: see manufacturer's address

TECHNISCH BUREAU

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Tools for the Specialist